



# UNITED STATES PATENT AND TRADEMARK OFFICE

UNITED STATES DEPARTMENT OF COMMERCE  
United States Patent and Trademark Office  
Address: COMMISSIONER FOR PATENTS  
P.O. Box 1450  
Alexandria, Virginia 22313-1450  
www.uspto.gov

APPLICATION NO.	FILING DATE	FIRST NAMED INVENTOR	ATTORNEY DOCKET NO.	CONFIRMATION NO.
10/006,880	12/05/2001	Vijay A. Deshpande	12801.0083.NPUS04	5128

26361 7590 02/09/2006

STEPHEN H. CAGLE  
HOWREY, SIMON, ARNOLD & WHITE, LLP  
750 BERING DRIVE  
HOUSTON, TX 77057

EXAMINER
----------

HANDAL, KAITI V

ART UNIT	PAPER NUMBER
----------	--------------

1764

DATE MAILED: 02/09/2006

Please find below and/or attached an Office communication concerning this application or proceeding.

<b>Office Action Summary</b>	<b>Application No.</b>	<b>Applicant(s)</b>	
	10/006,880	DESHPANDE, VIJAY A.	
	<b>Examiner</b>	<b>Art Unit</b>	
	Kaity Handal	1764	

**-- The MAILING DATE of this communication appears on the cover sheet with the correspondence address --**  
**Period for Reply**

A SHORTENED STATUTORY PERIOD FOR REPLY IS SET TO EXPIRE 3 MONTH(S) OR THIRTY (30) DAYS, WHICHEVER IS LONGER, FROM THE MAILING DATE OF THIS COMMUNICATION.

- Extensions of time may be available under the provisions of 37 CFR 1.136(a). In no event, however, may a reply be timely filed after SIX (6) MONTHS from the mailing date of this communication.
- If NO period for reply is specified above, the maximum statutory period will apply and will expire SIX (6) MONTHS from the mailing date of this communication.
- Failure to reply within the set or extended period for reply will, by statute, cause the application to become ABANDONED (35 U.S.C. § 133). Any reply received by the Office later than three months after the mailing date of this communication, even if timely filed, may reduce any earned patent term adjustment. See 37 CFR 1.704(b).

#### Status

- 1) ☒ Responsive to communication(s) filed on 06 September 2005.
- 2a) ☐ This action is **FINAL**.                      2b) ☒ This action is non-final.
- 3) ☐ Since this application is in condition for allowance except for formal matters, prosecution as to the merits is closed in accordance with the practice under *Ex parte Quayle*, 1935 C.D. 11, 453 O.G. 213.

#### Disposition of Claims

- 4) ☒ Claim(s) 6-11 and 17-23 is/are pending in the application.
- 4a) Of the above claim(s) \_\_\_\_\_ is/are withdrawn from consideration.
- 5) ☐ Claim(s) \_\_\_\_\_ is/are allowed.
- 6) ☒ Claim(s) 6-11 and 17-23 is/are rejected.
- 7) ☐ Claim(s) \_\_\_\_\_ is/are objected to.
- 8) ☐ Claim(s) \_\_\_\_\_ are subject to restriction and/or election requirement.

#### Application Papers

- 9) ☒ The specification is objected to by the Examiner.
- 10) ☐ The drawing(s) filed on \_\_\_\_\_ is/are: a) ☐ accepted or b) ☐ objected to by the Examiner.  
Applicant may not request that any objection to the drawing(s) be held in abeyance. See 37 CFR 1.85(a).  
Replacement drawing sheet(s) including the correction is required if the drawing(s) is objected to. See 37 CFR 1.121(d).
- 11) ☐ The oath or declaration is objected to by the Examiner. Note the attached Office Action or form PTO-152.

#### Priority under 35 U.S.C. § 119

- 12) ☒ Acknowledgment is made of a claim for foreign priority under 35 U.S.C. § 119(a)-(d) or (f).
- a) ☒ All    b) ☐ Some \* c) ☐ None of:
1. ☒ Certified copies of the priority documents have been received.
2. ☐ Certified copies of the priority documents have been received in Application No. \_\_\_\_\_.
3. ☐ Copies of the certified copies of the priority documents have been received in this National Stage application from the International Bureau (PCT Rule 17.2(a)).

\* See the attached detailed Office action for a list of the certified copies not received.

#### Attachment(s)

- |  |   |
|--|---|
| 1) <input type="checkbox"/> Notice of References Cited (PTO-892)   | 4) <input type="checkbox"/> Interview Summary (PTO-413)<br>Paper No(s)/Mail Date. _____ |
| 2) <input type="checkbox"/> Notice of Draftsperson's Patent Drawing Review (PTO-948)                                   | 5) <input type="checkbox"/> Notice of Informal Patent Application (PTO-152)             |
| 3) <input type="checkbox"/> Information Disclosure Statement(s) (PTO-1449 or PTO/SB/08)<br>Paper No(s)/Mail Date _____ | 6) <input type="checkbox"/> Other: _____  |

### **DETAILED ACTION**

A request for continued examination under 37 CFR 1.114, including the fee set forth in 37 CFR 1.17(e), was filed in this application after final rejection. Since this application is eligible for continued examination under 37 CFR 1.114, and the fee set forth in 37 CFR 1.17(e) has been timely paid, the finality of the previous Office action has been withdrawn pursuant to 37 CFR 1.114. Applicant's submission filed on 9/6/2005 has been entered.

### ***Specification***

1. Claim 22 is objected to because of the following informalities: Claim is incomplete. Appropriate correction is required.

### ***Claim Rejections - 35 USC § 103***

2. The following is a quotation of 35 U.S.C. 103(a) which forms the basis for all obviousness rejections set forth in this Office action:

(a) A patent may not be obtained though the invention is not identically disclosed or described as set forth in section 102 of this title, if the differences between the subject matter sought to be patented and the prior art are such that the subject matter as a whole would have been obvious at the time the invention was made to a person having ordinary skill in the art to which said subject matter pertains. Patentability shall not be negated by the manner in which the invention was made.

3. Claims 6-11, 17-23 are rejected under 35 U.S.C. 103(a) as being unpatentable over Cleary (USP 5,326,537) in view of McShea, III et al. (USP 4,483,691).

Regarding claims 6-11, and 17-23, Cleary discloses a module comprising:

Art Unit: 1764

- a circular module (illustrated in Fig. 4) having an inlet (38) for receiving a feed stream; a module outlet (39) for producing an effluent stream;
- a fixed bed reactor/catalyst (12 & 15) having a reactor inlet (17);
- a reactor outlet (25), and catalyst (15);
- an inlet spiral passage (36) in fluid communication with the module inlet (38) to the reactor inlet (17);
- and an outlet spiral passage (37) in fluid communication with the reactor outlet (25) to module outlet (3);
- a flow distribution manifold (13), centrally disposed (as illustrated) in fluid communication with the reactor inlet (17) for evenly distributing flow into the reactor (12);
- a flow collection manifold (16) in fluid communication with the reactor (12) for directing hot reactor product to the reactor spiral outlet passage (25) (as illustrated);
- and a cover/baffle (26) fitted to a side of the inlet spiral passage (36);
- wherein the flow distribution manifold/inlet plenum (13) is disposed between the reactor/catalyst (12) and the cover/baffle (13) for evenly distributing flow into the reactor (12);
- wherein the feed stream (23) is introduced to the module inlet (38), passes through the inlet spiral passage (36); and is heated by the hot reactor product passing through the outlet spiral passage (37);
- wherein the catalyst includes supported catalyst particles (C3/L48-52);

- wherein the catalyst includes monoliths (C3/L48-52).

While Cleary discloses that the catalyst used in the catalytic reactor is a catalyst comprising a platinum group metal, typically comprised of platinum and/or palladium, deposited on high surface alumina substrate which in turn is deposited on a honeycomb support structure of stainless steel or ceramic (C1/L18-30 and C3/L48-52), the reference does not explicitly disclose said catalyst being used as an autothermal catalyst including a partial oxidation catalyst and a steam reforming catalyst.

McShea, III et al. teaches that platinum group metal, typically comprised of platinum and/or palladium, deposited on high surface alumina substrate which in turn is deposited on a honeycomb support structure of stainless steel or ceramic is a known autothermal catalyst (C5/L65-C7/L20 and C12/L16-50). Additionally the reference in Fig. 2, teaches that autothermal reforming can be successfully performed in a reactor (80) comprising said catalyst, wherein the reactor feed (72, 74) is preheated in an indirect heat exchanger (76) by reactor effluent (82). Therefore, to use the reactor and catalyst of Cleary for autothermal reforming would be obvious to one of ordinary skill in the art, because it would amount to nothing more than a use of a known catalyst and reactor for its intended use in a known environment to accomplish entirely expected result.

Regarding limitations recited in claim 6-11 which are directed to a manner of operating disclosed reactor, neither the manner of operating a disclosed device nor material or article worked upon further limit an apparatus claim. Said limitations do

Art Unit: 1764

not differentiate apparatus claims from prior art. See MPEP § 2114 and 2115.

Further, process limitations do not have patentable weight in an apparatus claim.

See *Ex parte Thibault*, 164 USPQ 666, 667 (Bd. App. 1969) that states "Expressions relating the apparatus to contents thereof and to an intended operation are of no significance in determining patentability of the apparatus claim."

### ***Response to Arguments***

4. Applicant's arguments filed 9/6/2005 have been fully considered but they are not persuasive. Limitations described in both amended and new claims are still overcome by Cleary as follows:

- As indicated in the "Interview Summary", baffle (Fig. 4, 26) reads on having a cover as described in amended claims.
- Applicant's argues that Cleary does not suggest a reactor inlet piping for providing fluid communication between an inlet spiral passage (36) with inlet plenum/a flow distribution manifold (13). Cleary illustrates clearly in Figure 4 that in said reactor, inlet flow/spiral passage (36) is in fluid communication with inlet plenum/flow distribution manifold (13) via heater passage (27).
- Applicant argues that Cleary does not teach or suggest that the flow distribution manifold should be centrally disposed. This argument is moot as Cleary does illustrate that said flow distribution manifold (13) is centrally disposed (as illustrated Figure 4).

Art Unit: 1764

**Conclusion**

Any inquiry concerning this communication or earlier communications from the examiner should be directed to Kaity Handal whose telephone number is (571) 272-8520. The examiner can normally be reached on M-F 8-5.

If attempts to reach the examiner by telephone are unsuccessful, the examiner's supervisor, Glenn Caldarola can be reached on (571) 272-1444. The fax phone number for the organization where this application or proceeding is assigned is 571-273-8300.

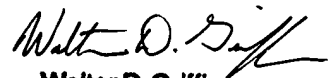
Information regarding the status of an application may be obtained from the Patent Application Information Retrieval (PAIR) system. Status information for published applications may be obtained from either Private PAIR or Public PAIR. Status information for unpublished applications is available through Private PAIR only. For more information about the PAIR system, see <http://pair-direct.uspto.gov>. Should you have questions on access to the Private PAIR system, contact the Electronic Business Center (EBC) at 866-217-9197 (toll-free).

KH

\*\*\*



1/31/2006

  
**Walter D. Griffin**  
**Primary Examiner**